

Recommendations for the storage of slides

(Heike Koenitz)

The report is based on research carried out for the diploma dissertation completed in 2006 at University of Applied Sciences (FHTW), Berlin. The dissertation deals with the subject of "Duplication of slides, using as an example a slide installation by Nan Goldin, Hamburger Kunsthalle". No own trials for the storage and keeping of slides were conducted.

Colorants react to moisture and oxidising substances even at room temperature and even away from the light. This causes colour fading, termed dark fading. At risk are all materials manufactured on the principle of chromogenic development. Storage at under room temperature is therefore recommended¹. A suitable method is *freeze storage*. This works on the principle that chemical reactions take place more slowly at low temperatures.

A suitable freezer is a no-frost unit², in which the cooling system is spatially separated from the cooling compartment. As a result, temperature and atmospheric humidity are achieved faster. Storage takes place at defined minus values down to -20°C and a relative humidity (RH) of 20-50 %³. A freezer should be replaced new every ten years.

Suitable as packing materials are sleeves made of polyethylene (PE)⁴, polyester or polypropylene. The advantages of these materials are that they prevent an exchange of air with the frozen materials, are stable, contain no plasticisers and in direct contact with the cultural artefact do not react in any way. Furthermore, they are transparent and so make classification considerably easier. A logical system and labelling prevents unnecessary movement of the objects.

Preparation for freeze storage might take the following form⁵:

1. Slides in PE slide sleeves (for box files) or in slide magazines
2. in PE sleeve, packed airtight
3. between two or more layers of cardboard, ensure a slow defrosting phase after removal
4. in an archive box
5. Placing of humidity indicator strips with impregnated cobalt chloride solution between inner and outer sleeve on the outside of the box
6. in PE sleeve, packed airtight.

For long-term archiving it is recommended that the films be sealed airtight. A medium-term solution would be to seal the bags with a zip fastener or clip, e.g. with Topix clips of the kind used for frozen food. Repeated use of a clip may impair the seal. The clip should be used only at room temperature. Bags with an adhesive seam or side gusset are not suitable. Pretreatment

¹ DOBRUSSKIN et al. 2001, 18

² BERTRAM 1996, 6

³ DOBRUSSKIN et al. 2001, 76

⁴ WILHELM 2003, 669

⁵ MC CORMICK-GOODHART 2003, 2

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for low atmospheric humidity is recommended⁶. After being removed the bags are kept closed until completely defrosted. This prevents condensation forming on the artefact.

For storage the bags are provided with absorbents such as zeolite-based molecular filters to filter out contaminants. These have the ability to adsorb acetic acid escaping from acetate films (vinegar syndrome). They are available from the supplier Monochrom. Direct contact with the artefact should be avoided. Protection from oxidising air constituents is provided by keeping the slides in Microchamber[®] boxes containing active charcoal.

Climatic checks can be carried out by various means. Humidity indicator strips respond to changes in atmospheric humidity by a change in colour. They are obtainable from, amongst others, the Christoph Waller mail order company. For precise checking of climatic values hygrometers are suitable. They should not be kept in the refrigerator permanently, as storage for longer periods may result in inaccuracies⁷. Regular checks with a hair hygrometer every two to three weeks or the use of data loggers are recommended.

Apart from the option of deep freeze storage, slides are kept in glassless frames, in metal drawers or archive boxes. The advantage of archive boxes made of archive board is that this material acts as a buffer against environmental impact and contaminants and ensures slow adjustment to the ambient climate. The containers are available in the form of e.g. Nomi boxes from Klug Conservation. The climate should be as low as possible.

For slide duplicates slide journals or transparent slide sleeves may be used. These include plastic materials of polyester e.g. from Secol or polypropylene, e.g. from PrintFile. A number of sleeves can be stored in a box file. Archive furniture (slide cabinets) should be in the form of closed systems made of stove-enamelled steel⁸.

⁶ JOHNSON 1998, 118

⁷ BERTRAM 1996, 7

⁸ SCHMIDT 1995, 80

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published at the project-website www.inside-installations.org

June 2007